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AUTHOR Orivel, Francois
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ABSTRACT

Focusing on the education situation in Sub Saharan Africa, this paper states that while education systems in the region are faced with tremendous problems, over-generalization should be avoided, because all the problems referred to are not equally serious, and they are more acute in some countries than in others. The analyses and comments in the paper relate to 47 countries in Sub Saharan Africa, covering almost all of the area concerned with the exception of South Africa. The paper is divided into 9 sections: (1) the evolution of overall enrollment figures over the past two decades; (2) enrollments at different levels; (3) the enrollment of girls; (4) teachers: number, training, and status; (5) higher education: costs, types of graduates, the brain drain, research; (6) the efficiency and evaluation of education systems; (7) the financing of education systems; (8) education and employment; and (9) external aid to education. When the overall data relating to the number of pupils enrolled in the region was examined, researchers noted the very rapid increase in pupil intake; in the 20 years from 1970 to 1990 the figure rose from 23.5 million pupils to 70.7 million. No other education system in the world has had to cope with such a growth. Education systems in the region vary considerably in size. Enrollment indicators vary from one country to another. If trends in some countries are not reversed, the majority of the populations of working age of the least educationally developed countries will be illiterate in a hundred years. (DK)

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International Commission on Education for the Twenty-first Century

EDUCATION SYSTEMS IN SUB-SAHARAN AFRICA: DIAGNOSTIC ELEMENTS AND RECOMMENDATIONS

FRANCOIS ORIVEL
DIRECTOR OF RESEARCH - CNRS, IREDU
UNIVERSITE DE BOURGOGNE, DIJON

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Education systems in Sub-Saharan Africa: diagnostic elements and recommendations

by

François Orivel
Research Director, CNRS
IREDU, University of Burgundy, Dijon

(Draft version, August 20, 1993)

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1. The evolution of overall enrolment figures over the past two decades

1.1. It is nowadays commonplace to hear the education situation in Sub-Saharan Africa described as a universe of desolation. It is true that education systems in this region are faced with tremendous problems, but over-generalization should be avoided, for all the problems customarily referred to are not equally serious, and they are more acute in some countries than in others.

1.2. The analyses and comments which follow relate to 47 countries in Sub-Saharan Africa, covering almost all of the area concerned with the notable exception of South Africa, which it is hoped will very shortly be reintegrated in the sub-region. It is worth noting that if it were included in the calculation of regional averages, the performance indicators used would be significantly improved, and not the reverse.

1.3. When we examine the overall data relating to the number of pupils enrolled in the region, we are struck by the very rapid increase in pupil intake; in the twenty years from 1970 to 1990 the figure rose from 23.5 million pupils or students to 70.7 million: a threefold increase. No other education system in the world has had to cope with such a growth. Admittedly, the two decades in question are strongly contrasted, for in the 1970s the average annual growth rate was 9%, as compared with 2.2% in the 1980s - slightly less than the population growth in that period. But even though this decade, often written off as a loss, was a very difficult time for education systems, the number of pupils rose in absolute terms by nearly 15 million - an increase of around 25%. Over the same period, it may be recalled, the numbers remained stationary or even declined in European countries.

1.4. Education systems in the region vary considerably in size. The ten countries with the biggest systems (Nigeria, Zaire, Kenya, Tanzania, Ethiopia, Uganda, Sudan, Ghana, Zimbabwe and Cameroon) account of 70% of the total number of pupils enrolled (49 million, or an average of 5 million each), while the remaining 30% are shared among the other 37 countries, averaging only half a million pupils each. Between Nigeria's 17 million pupils (a quarter of the total for Sub-Saharan Africa) and the 19,000 pupils in Seychelles, the ratio is a thousand to one.

1.5. Enrolment indicators vary from one country to another. The most synthetic indicator, which relates the total number of students or pupils to the population group aged between 6 and 23, gives a minimum of 11% in Mali and a maximum of 67% in Zimbabwe, a figure close to that attained in developed countries. Between these two extremes, whose wild divergence cannot be sufficiently emphasized, we naturally find all possible intermediate figures, having probable consequences on future economic development which are by no means likely to be neutralized in the near future. If trends in some countries are not reversed, the majority of the populations of working age of the least educationally developed countries will be illiterate a hundred years from now.

1.6. Failure to take these divergences into account can lead to serious errors in diagnosis, especially in the calculation of certain averages. In English-speaking countries, the arithmetic mean of the indicator referred to above remained stable at 46% during the 1980s. In French-speaking countries, it stood at 33% in 1980, rose to 35% in 1985, and fell to 32% in 1990. Two apparent conclusions can be drawn: French-speaking Africa achieves results inferior to those of English-speaking Africa, and the recent period (1985-1990) is characterized by a marked deterioration in French-speaking Africa.

1.7. Quite a different picture emerges when we calculate the weighted averages for this same indicator. These weighted averages differ from the preceding ones in that they allow for the fact that the countries concerned vary in size, and hence the population of each country included in the average is taken as a weighting factor. With this correction, the francophone indicator remains practically stable over the decade (dropping from 35% to 34%), while the anglophone indicator drops from 39% to 35%. The previous conclusions are exactly reversed; it can no longer be said that francophone Africa's performance is inferior to that of anglophone Africa; it is the latter, and not the former, that has seen decline in the course of the decade.

1.8. This reversal of conclusions results from two phenomena. In the anglophone group, small countries like Botswana, Swaziland, Lesotho, Namibia and Mauritius have very high indicators compared with large countries like Nigeria, Tanzania, Sudan and Uganda. The weighted indicator thus has a lower value than the arithmetic mean. Furthermore, the indicators of two of the biggest anglophone countries, Nigeria and Tanzania, dropped markedly in value during the decade: in Tanzania, it fell from 44% to 32%, and in Nigeria, from 50% to 37%; 12 and 13 points respectively, which suffices to explain the average decline of this group from 39% to 35%.

1.9. This brief analysis reminds us that in a domain where the size of the components is markedly differentiated and the value of an indicator characterizing them is highly unstable, weighted averages are often more appropriate for describing their evolution.

1.10. In addition to the anglophone and francophone groups, which number respectively 18 and 21 countries, there is a third group comprising the other 8 countries, of which 6 are Portuguese speaking (lusophone). The performance of this group of 8 countries is in general inferior compared with the first two groups, a difference which can be explained, for some of them,to the liberation struggle which was prolonged until a relatively recent date and a delay in the operation of a post-colonial government institutions. It can be seen that, in 1970, this group had a very low level of enrollment, 10% against slightly more than 20% for the others. This has since doubled during the 1970s reaching 23% in 1980, but unfortunately it has regressed to 19% in 1990. It must be noted that the nineties has been a tragic decade for the four largest countries of this third group: Angola, Mozambique, Ethiopia and Sudan.

1.11. Altogether, the region made remarkable progress in the seventies, the overall enrolment ratio rising from 20% to 35%, and lost a fifth of this increase in the following decade, falling back to 32%. The improvement was more marked in small countries than in large ones, though there were no significant differences from one cultural area to another apart from a slight shortfall in Portuguese-speaking countries. Despite these improvements, the region suffered a certain decline in the late eighties, mainly due to the fact that it had a greater lag to make up than the rest of the world, while the population of school age increased more rapidly than elsewhere.

2. Enrollments at different levels

2.1. Most recent analyses of the evolution of the number of pupils enrolled by level of education (primary, secondary, and higher) underline, and deplore, the fact that primary education is expanding less rapidly than other levels, whereas logically it should enjoy higher priority. The arguments in favor of this priority are economic (the return on investment in education is highest at this level); ethical (it is not fair to offer some people secondary or higher education highly subsidized from public funds while primary education is out of reach of a high proportion of its eligible age-group); and political (secondary school

leavers and higher education graduates are faced with growing unemployment in their country and are to an increasing extent tempted to emigrate to countries in the North, thereby depriving countries in the South of a human capital for which they have paid a high price but from whose productivity others are benefiting).

2.2. African authorities are not, in general, convinced by these arguments. They consider that their countries will not attain equal status with the developed nations until they have succeeded in producing an equivalent élite. If some of this élite take up temporary residence abroad, they can play a useful role as ambassadors, and subsequently as investors in their own countries, as the Chinese diaspora are now doing so successfully. They do not wish to deprive their compatriots of a more enviable lot than might have been theirs had they remained at home with a lower level of education. "They must be given a chance", it is often said, even if this chance means that dozens of their compatriots are deprived of any form of basic education due to budgetary constraints. And furthermore, in francophone countries, the authorities are paralyzed by the idea of having to ration the entry of secondary school leavers to university (a tradition inherited from metropolitan France) without regard to the public-sector costs involved and the budgetary capacity to meet them. To deprive the potential beneficiaries of this opportunity is a major political risk which few authorities are prepared to take.

2.3. These same authorities are equally sensitive to the pressure which international events such as the Jomtien Conference can exert on their educational policy objectives. Such events motivate them to do more to remedy the most blatant shortcomings, for example to provide literacy training for everyone. But obedience to such imperatives lies more in a strategy of mobilization of greater resources, notably through greater recourse to external funding, than in a strategy of arbitration which can compromise the status quo at post-primary levels.

2.4. Some countries have found the embryo of a solution to this dilemma by encouraging private funding at post-primary levels, as in Kenya and Malawi, or by rationing access to those levels when they are mainly funded from the public sector, as in Tanzania. These policies are more actively pursued in anglophone Africa, and are more frequently encountered at secondary than at higher level. It is perhaps worth recalling here that this model is widespread in Latin America, where it tends to produce satisfactory results, and to a lesser extent in Asia.

2.5. The growth of the number of pupils by level during the 1980s did not reflect the concerns of Jomtien. Growth was slowest at the primary level (1.9% annually from 1980 to 1985, 2% from 1985 to 1990); only two thirds of the population growth. Not only was the previous lag not made up, it manifestly widened. On this point it may be noted that performances in francophone Africa were slightly better than those of other linguistic areas. At the secondary level, the enrolment growth rate attained twice the population growth rate during the first five years of the decade, and the two rates converged in the second five years. Higher education emerged as the privileged level of the decade, with a growth rate about three times that of the population in the course of the two sub-periods. This lead was somewhat more marked in anglophone Africa than in francophone Africa.

3. The enrolment of girls

3.1. It is a well-known fact that fewer girls than boys are enrolled in school in Sub-Saharan Africa. It is more worth-while analyzing this discrimination in dynamic rather than static terms. And on this point, recent comments have not, in our view, sufficiently highlighted the progress made. Here we have what is perhaps the only educational

indicator that has constantly improved, even in periods of great difficulty. Overall, the proportion of girls in the total number of pupils enrolled was 38% in 1970, 42% in 1980, 43% in 1985, and 44% in 1990. They gained two points per five-year period in the 1970s and one point in the 1980s. Admittedly, at that rate it would still take thirty years for their enrolment to break even with that of boys, but it should not be forgotten that over the past ten years the total enrolment has dropped; this means that there is little point in any attempt at extrapolation, it simply means that boys were more affected by the decline than girls.

3.2. The difference between the enrolment figures for boys and girls is even more marked as the level of education rises; this is not a phenomenon specific to Sub-Saharan Africa, but is universal. In 1990, the proportion of girls was 45% at primary level, 40% at secondary level, and only 26% in higher education. It should however be added that in dynamic terms, the greater the disproportion between girls and boys, the more rapidly it diminishes. In the last decade, girls gained five points over boys in higher education and two points at primary level.

3.3. The difference between the enrolment figures of boys and girls varies somewhat from one cultural area to another. It is greater in francophone Africa (41% against 45%) and diminishes slightly less rapidly (a gain of four points in 20 years as compared with two points in anglophone Africa). Other countries, whose educational indicators are in general somewhat less satisfactory than those of the two major groups) made good progress in this field, gaining 9 points in 20 years, placing them slightly ahead of the francophone group in 1990. The slower advance in the latter group can be accounted for by its high concentration in the Saharan belt, which it shares with Sudan and Somalia, a group whose common denominator lies in the special traditions of Islam, whose effects are felt as far away as the interior of certain countries such as Nigeria. Twelve countries out of forty-six lying in Africa south of the Equator have practically solved the problem of gender discrimination, attaining 49% or more girl enrollments. It is true that these countries are also those which most closely approach the goal of universal schooling, whereas the preceding group is still furthest away from that goal.

4. Teachers: number, training and status.

4.1. In the course of the last decade, the number of teachers increased at a steady rate, more rapidly than that of pupils, and this improved pupil/teacher ratios somewhat. At the primary level, the number of teachers rose 27% from 1,169,000 to 1,486,000, and at secondary level by 81% from 310,000 to 562,000. The pupil/teacher ratio dropped slightly, from 41 in 1980 to 39 in 1990 in primary schools, and from 26 to 22 in secondary schools. Here again, this evolution reflects priorities that do not conform to those of Jomtien. Studies of school efficiency do not reveal any improvement of quality when the pupil/teacher ratio drops from 26 to 22, whereas unit costs rise by about 15%. The average pupil/teacher ratio of 39 at primary level is doubtless not a pedagogic ideal, but it tends to bear out the fact that it is probably more profitable, from the micro-economic and the macro-economic angles, to assign new teachers to children not previously enrolled in school than to improve the pupil/teacher ratio of those already enrolled. This is still the prevailing situation in the majority of countries of the region.

4.2. Francophone countries conform to the average at secondary level, but at primary level they have made relatively less effort, retaining the highest pupil/teacher ratio (44, compared with 37 in anglophone and other countries). Departure from the Jomtien norm is thus more marked in francophone countries.

4.3. At the level of higher education, we observe a tendency for the student/teacher ratio to rise. This may be interpreted more as an improvement in cost-effectiveness than as a regrettable decline in quality. The average student/teacher ratio has risen from 13 to 15 (13 to 14 in francophone countries, 13 to 16 in anglophone countries, and 11 to 17 in others). We may therefore consider that there has been a positive, though still insufficient, evolution, especially in francophone countries. Without claiming to establish absolute references, it may be recalled that these ratios are above 20 in Germany and France, countries where the quality of higher education is somewhat better, but where the combination of pedagogic inputs is less favorable to the proportion of resources allotted to teaching staff by comparison with other facilities (infrastructures, equipment, teaching materials, libraries and laboratories); this is not the case in numerous African universities.

4.4. Where teacher training is concerned, it should first of all be recognized that since these African countries became independent the average standard of teacher training has improved considerably. "Monitors", professionally untrained or having received an inadequate secondary education, have been replaced almost everywhere by qualified teachers. The real question that arises today is whether existing teachers, especially at the primary level, are over-qualified rather than under-qualified. This is obviously a tricky question, one on which economists tend to differ from educators, for whom "more" is synonymous with "better", irrespective of considerations of cost-effectiveness. Recent work on the factors determining pupils' learning achievement has shown that the latter improves as the level of teacher training approaches the secondary school leaving certificate, but beyond that level there is no further improvement. Given that salaries continue to rise to match the level of teacher training, the cost-effectiveness of the latter declines beyond a certain threshold. Yet a not insignificant number of countries have undertaken a reform of their system of training primary school teachers inevitably involving an extension of training beyond this threshold.

4.5. The status of teachers varies from one country to another. In most francophone countries, they have the status of civil servants employed by the central government, closely modelled on the French system. This status gives teachers a relatively advantageous protection, even though the advantages they enjoy have been whittled down in the course of the years: job security (even for those who do not come up to the mark), the possibility of transfer to other branches of the civil service, and entitlement of married teachers to a post located near their husband or wife (which favors the concentration of teachers in urban localities). In developed countries, such advantages compensate for the fact that the salaries of civil servants tend to be lower than in the private sector for people with equivalent qualifications. This compensation is not always justified in Africa, where salaries in the competitive sector are often lower than in the public sector. In Mali and Chad, for example, teachers in private schools, who are not civil servants, accept much more modest salaries than those in the public sector.

4.6. But this phenomenon is not general. In other countries, those which have suffered high inflation, the purchasing power of teachers' salaries has fallen to an extremely low level, as in Zaire, Guinea, Madagascar, Nigeria and Uganda. Admittedly, it is difficult to say what the appropriate level of teachers' salaries should be. If they are correlated with the per capita GDP, we see that the more developed the country, the closer they come to the value of the GDP. Conversely, in the least developed countries, these salaries are a multiple of the per capita GDP. The average multiplying factor is about three in such countries, so it may be deduced that countries in this category which depart widely from the factor three tend to over-pay or under-pay their teachers. Almost all variations on this theme are to be found in Africa, including extreme cases where the multiplying factor is more than ten and others where it is less than one.

4.7. It is often asserted that teachers' growing lack of motivation is linked with the inadequacy of their salaries. In our view, the problem is more complex. In a number of countries where salaries appreciably exceed the multiplying factor of three, teachers' motivation is scarcely any greater than elsewhere. This is accounted for by other factors: the irregular payment of salaries (there is a relation between the budgetary difficulties of the State and the wage-bill of its employees), failure to take the quality of the work performed into account, weak leadership, the geographical remoteness of higher authorities, unions more concerned with teachers' rights than with their duties, and poor working conditions. Given the probable budgetary prospects of the countries of the region and the enormous needs which remain to be met, a high proportion of them cannot seriously envisage improving the performance of their education systems by raising the status and salaries of teachers.

5. Higher education: costs, types of graduates, the brain drain, research

5.1. This subject has been abundantly dealt with in recent years. Successive reports, most of them produced by independent experts, lead to comparable conclusions. The first is that unit costs are too high, whether we take as a reference unit costs at lower levels of education, or the per capita GDP. In the former case, we find costs per student 50 to 100 times higher than costs per primary school pupil, whereas the multiplying factor averages only 2.5 in OECD countries. The idea that unit costs are too high is not necessarily valid, in our view, if it implies that the education authorities of the countries of the region must undertake a policy of reducing them. In reality, African universities today are desperately short of resources to provide an acceptable standard of higher education. The problem lies more in the use that is made of available resources. Too high a proportion of expenditure is accounted for by teachers' salaries and various kinds of assistance to students (grants, subsidized accommodation and meals), while all other inputs are sacrificed. Most of these inputs have to be imported, and African universities cannot control their cost. It is not certain that a rigorous policy of salary cuts and reduced student facilities will lead to a parallel reduction in present unit costs if the resulting savings are used to acquire a minimum of inputs hitherto lacking and without which higher education cannot survive.

5.2. Where types of graduates are concerned, one may note an excessive proportion of graduates destined for the civil service and condemned to unemployment. The training of secondary school teachers, which is the traditional task of universities, is deficient in scientific disciplines and has a superfluity of other disciplines (arts, languages, social sciences). Even the training of lawyers, economists, doctors, veterinarians and agronomists is nowadays tending to exceed requirements corresponding to the demand that can be met, since the recruitment of such specialists in the public sector is tending to dry up. Channeling the student flow into vocational disciplines matching the requirements of business and industry is easier said than done. Given the present state of the economies of African countries, there is good reason to question the total number of higher education graduates rather than merely re-channelled them away from the oversupplied disciplines. Africa primarily needs entrepreneurs, and the universities are not necessarily the most appropriate places to produce them.

5.3. No systematic data exist concerning the brain drain of graduates to developed countries, but it is probably low among graduates who have received all their training in African universities and high among those who have been partially or fully trained in universities of the North, apart from those who attended universities in Eastern Europe or the former USSR, who were obliged to return home on completion of their studies.

5.4. As already mentioned, the budgetary crisis that persists in African universities has not given rise to the most relevant choices in terms of the rational allocation of resources; the aim has been to minimize the social pressures on policy decision-makers. In a way, academic quality has been sacrificed on the altar of social peace and quiet. The consequences of this have been especially disastrous where research is concerned. The contribution of African universities to the world's scientific output has been negligible. In the case of francophone universities, the concern of each country to be independent over the whole range of traditional higher education has dashed all hope of establishing inter-State centers of excellence which would have led to the emergence of post-graduate training competitive with that provided by universities of the North, with the result that the latter have retained practically a monopoly in this field. This is doubtless somewhat less true of anglophone African countries like Nigeria, which attain the critical size enabling them to nourish certain ambitions. But the really significant well of African potentialities in the field of research lies in South Africa; its visible manifestation will depend on the outcome of the current political reforms in that country.

6. The efficiency and evaluation of education systems

6.1. Unfortunately, there are few objective bases on which the performances of the education systems of this region can be assessed. Opinions on this subject are unanimously pessimistic, except for those of some of the authorities in the region itself who continue to express self-satisfaction. But opinions of education systems are of limited value. They depend in large measure on which side of the fence those who express them are situated. In francophone countries there is a body of several thousand expatriate co-operation agents, some of whom have long experience of the realities of African education. In the main, their views accord with the chorus of negative opinions. The criticism that can be levelled at these judgements is that they take no account of the concept of "value for money". Most of the opinions expressed by observers outside the education systems of the region are implicitly based on unrealistic standards: those of the school which functions satisfactorily among all those which should so function in a context of relatively abundant resources.

6.2. The cognitive skills acquired by pupils have never been systematically measured in the region. It is impossible to say whether the pupils in francophone countries are more or less skilled in this respect than those in anglophone countries. Nor do we know anything about the cognitive skills of African pupils compared with those in Asia or Latin America. The francophone countries continue to award the *Baccalauréat*, the secondary school leaving certificate, which is assumed to reflect the same level of cognition as in France. This assumption has never been objectively verified. Many observers are convinced that in the course of the years this level has declined, but many others think the same about the French *Baccalauréat*. Over the past ten years or so there has been a tendency for the percentage of *Baccalauréat* successes to decline in most of the countries where this examination is held. Nowadays the pass rate is between 10% and 30%, but we do not know to what extent this decline is attributable to weaker candidates or to what extent it is the result of a political resolve to limit the number of people eligible for higher education which is nearing saturation point.

6.3. Many analyses of the efficiency of the education systems of the region are based on two indicators: the grade repetition rate and the dropout rate before the end of one or another stage of education. The grade repetition rates are significantly higher in francophone Africa (of the order of 25%) than in anglophone Africa (around 10%) leading to the erroneous conclusion that francophone schools are less efficient. There are throughout the world, many and varied different traditions concerning repetition, which

range from forbidding any repetition or automatic promotion to highly selective practices with an annual examination before passage to the next highest grade. It is entirely possible that pupils learn more in education systems where repetition is prevalent (because they work harder to avoid repetition), than other systems where repetition is scarce. Its just as likely that the reverse is the case. And consequently,
one should be prudent before associating lack of repetition or low repetition with pedagogic excellence.

6.4. Some authors prefer to use indirect indicators such as the existence or otherwise of this or that pedagogic input. It is true that it can be inferred that pupils who have never seen a reading primer are not much good at reading, and the situation is commonplace in Sub-Saharan Africa. But we have to be extremely prudent with this type of inference, for empirical work on the relations between educational inputs and outputs inevitably leads to the conclusion that such relationships are tenuous.

6.5. Nevertheless, there is little doubt that the skills acquired by pupils in the schools of the region are inferior to those in most other regions of the world. It is probable that the internal allocation of resources is not optimal, and that certain inputs such as textbooks are sacrificed in favor of the work factor, whose marginal efficiency is low. Too many countries have school years that are too short, and they do not put enough effort into encouraging pupils' individual work. But before implementing policies aimed at greater efficiency, two things have to be done: define, operationally, the skills to be acquired in order to establish credible mechanisms of measurement, and seek optimal combinations of inputs in the light of limited budgetary resources.

7. The financing of education systems

7.1. As in the rest of the world, this region's education systems are financed mainly from public funds. Data relating to private expenditure are very incomplete, even in countries possessing sophisticated mechanisms for gathering statistics. Sixty per cent of OECD countries are able to indicate the order of magnitude of their private expenditure on education; it averages one sixth of public-sector expenditure. There is little reason to assume that the situation in Sub-Saharan Africa is significantly different in this respect. In some countries of the region, which have a generous scholarship policy, the scholarship budget can reach half of the public-sector expenditure on higher education. From an analytic point of view, as scholarships are considered a transfer of revenue to households, it can be inferred that in such countries, all other things being equal, the net contribution of households to education finances is lower, and in some extreme cases, negative.

7.2. As in the case of the number of pupils enrolled in school, it should be pointed out that where public-sector expenditure on education is concerned there is no homogeneity among the countries concerned. It even seems that in the recent past the differences between one country and another have become more marked, in contrast to developed countries, where there has been a steady trend towards convergence in this respect over the past fifteen years or so.

7.3. The uninformed reader may understandably be astonished by the considerable differences encountered with regard to expenditure, depending on the sources consulted. The commonest indicator, the percentage of the GDP allotted to public expenditure on education, is credited with a value of 3.4% for the region as a whole by UNDP (Report on Human Development, 1993) for the period 1988-1990, and 4.9% by the latest UNESCO Yearbook, which is the most frequently quoted source. These differences have two causes; the first relates to the unit of value adopted in converting national currencies into

a common currency. Some sources use the average US dollar rate of exchange in the year in question; others the dollar adjusted to allow for parities of purchasing power. The second cause is that, as we have already seen in the case of enrollments, some sources give averages that have not been weighted to allow for the size of the countries belonging to the group under study, while others use weighted averages. This has an unexpectedly wide-ranging impact in the present case, because in the largest anglophone country, Nigeria, and the largest francophone country, Zaire, this indicator plunged in the 1980s. Already modest in Zaire in 1980 at 2.6%, it fell to 1% in 1985 and 0.9% in 1988, the last year for which the figure is available. The downturn of the Nigerian budget was even more spectacular; it fell from 6.1% in 1981 to 1.2% of the GDP in 1985. In both cases, the explanation is the same, and it applies to other and less populous countries like Madagascar and Zambia: during the period in question, these countries suffered a very serious monetary erosion, which was initiated on the foreign currency markets and was subsequently reflected in a high internal inflation. The salaries of civil servants, and in particular those of teachers, did not keep pace with this inflation, hence a loss of purchasing power which in some cases attained considerable proportions; the purchasing power of teachers in Zaire, for example, was slashed by 90% in a few years. Given the proportion of expenditure on education accounted for by salaries, which generally exceeds 90% in the region, the decline of these salaries in terms of constant currency explains why the percentage of the GDP allotted to education fell in these countries.

7.4. It is often said that structural adjustment programs have dealt a severe blow to education budgets in particular and social budgets in general. If history could be rewritten, eliminating these programs which have conveniently served as scapegoats, it is not certain that education budgets would have been any higher, other things being equal; witness the examples of Nigeria and Zaire, which rejected such programs. The collapse of public-sector budgets is not the result of structural adjustment programs, but is one of their principal causes. It is doubtless true that some of these programs did not slash public expenditure where it ought to have been slashed, and here military expenditure comes to mind, as many other authors have remarked. But is it believable that the steps taken were imposed by external interventions hostile to reductions in military expenditure?

7.5. If we exclude Nigeria and Zaire (two countries which allot manifestly too little of their public funds to their education systems) from the calculation of the weighted average of the indicator of educational expenditure, the percentage of the GDP allotted to this sector is around 5%. Is this enough? It is worth recalling that this percentage is precisely that towards which most developed countries are converging. Moreover, Africa's competitors in the world economic development race, the countries of Asia and Latin America, devote a lower percentage of their GDP to this sector, 4% or less, while achieving somewhat better results in terms of educational output. No development process can be initiated and sustained without human capital. But nor can any development process be initiated without investment in the productive sector. And the latter is linked with the national investment capacity, which is always limited, and one extra point for education perhaps means one point less for another factor of development. It is perhaps desirable to exceed 5% today, but it should be borne in mind that such decisions involve opportunity costs, and before reaching a decision all the alternatives should be explored; among them are reduction of waste, the mobilization of all resources (especially families for post-primary education and business and industry for vocational training), and making the best possible use of external aid.

8. Education and employment

8.1. Reference has already been made to the employment problems encountered by many higher education graduates. Consequently, they are reduced to accepting jobs traditionally held by general or technical secondary school leavers, who are in turn threatened by unemployment. Many counsellors suggest developing vocationally-oriented technical education so as to make school leavers more employable. This advice has been followed in Zaire, where 27% of secondary school leavers receive this type of education, and in Rwanda, where the percentage is 57%. The weighted average percentage in francophone Africa today stands at 19%, as compared with only 3% in anglophone Africa. So far as we know, no empirical studies have shown that the adoption of this strategy in francophone countries has proved profitable or promising in terms of employment and growth. The unit costs of technical school pupils are higher, but their employment does not seem to be facilitated. In the present context, only Ministries of Education can take steps to give education a vocational slant in Africa, and this supposes flexible partnerships with employers and craft industries based on a prior identification of requirements, both quantitative and in terms of training content.

8.2. One of the most striking features of Sub-Saharan Africa compared with other developing regions is that up to now school leavers, and particularly primary school leavers, are disinclined to enter agricultural occupations. Very many studies, historical in the case of developed countries and contemporary in Asia and Latin America, have revealed a close relation between the educational level of farmers and their productivity. In Africa, by contrast, it is as though education were designed to prepare pupils not to become farmers, but to enter some other occupation. This is an illusory idea, in view of the fact that in most countries of the region more than half of the generation of school age will eventually become engaged in agricultural occupations. To rectify the current situation, many projects have attempted to provide additional agricultural training for primary school leavers, or even to include it in the primary school curriculum. Few such projects have produced convincing results. It would take too long to explain why, but obviously what has succeeded elsewhere has resulted from a simple approach: future farmers learn to read, write and count in primary school, and, when the time comes, agricultural extension courses teach them how to step up their productivity.

9. External aid to education

9.1. Sub-Saharan Africa receives $15,000 million worth of aid annually, the equivalent of $31 per capita. This is significantly more than the average of $11 for all developing countries. About one tenth of this aid is earmarked for education. Until the mid-1980s, a high proportion of this went to higher education, technical and vocational education, and teacher training, and only seven per cent to primary education. Since then some donors have re-channeled their aid to primary education, in particular the World Bank, American bilateral aid agencies, and to a lesser extent some others. Previously, aid usually took the form of projects: the construction and equipping of a university or a section of a university, a technical secondary school, a teacher training college, the creation of a National Pedagogic Institute, and so on. Once the project was completed, the government of the beneficiary country was requested to meet the running costs of the new establishments. But with effect from the early 1980s these governments were urged by these same donors to reduce their running costs to cope with the inexorable rise in budget deficits. The system bordered on the absurd.

9.2. To avoid this vicious circle, donors must agree to pay the salaries of certain African teachers directly. But they do not like doing so, fearing to get involved in a mechanism from which they might find it difficult to extricate themselves subsequently. Nevertheless, they sometimes agree to do so indirectly, when they provide certain States with budgetary

support that is ultimately used to pay the salaries of civil servants, including teachers. Donors whose established procedures do not allow them to finance running costs permanently are relatively powerless to do anything at the level of primary education, for at that level almost all the costs involved are running costs. The array of devices used in recent projects clearly reflects this difficulty: there is generally an institutional support component enabling vehicles (and motor fuel for them) to be purchased for inspectors to visit their schools; a teacher retraining component, considered as an investment in that several generations of pupils will benefit from it; a school construction or renovation component; and a textbook component. Apart from school construction, all these components represent running costs which have to be refinanced permanently. It may be noted that the construction component is itself relatively secondary; recent studies of the factors determining pupil performance reveal no difference between pupils taught in classrooms of durable modern construction financed by external aid, and pupils taught in classrooms of traditional construction.

9.3. External aid involves a variety of partners, all of them subject to specific bureaucratic procedures. And the back-up of education systems as it is nowadays conceived calls for a serious effort to achieve co-ordination, coherent approaches, and transparent procedures. Despite some recent progress, much remains to be done. Donors like to be able to identify their action and present it to their mandators. If a consortium of donors finances the salaries of several thousand teachers, it is difficult to discern who's who. In reality, if external aid is to be really effective, the idea has to be accepted that one of the donors conducts the orchestra, as it were. Aid is also an instrument of influence, and delegating its management to others deprives it of most of this attribute.